

for each respective bounding box in the set of bounding boxes, determine a respective class score based on a portion of the first image bounded by the respective bounding box using a convolution operation, wherein the respective class score is associated with a first object type in a set of object types, and wherein the respective class score is indicative of a likelihood that the respective bounding box is bounding an object of the object type; and

detecting the first entity based on the set of bounding boxes and a set of class scores comprising the respective class scores.

11. The medium of claim 1, wherein determining the sequence of locations of the first entity through the monitored environment the operations further comprises applying a Kalman filter to determine the sequence of locations based on the second set of locations.

12. The medium of claim 1, wherein the plurality of sensors is a first plurality of sensors, and wherein the operations further comprising:

acquiring, using the computer system, a second set of sensor measurements of the monitored environment from a second plurality of sensors, wherein the second plurality of sensors are different from the plurality of cameras, and wherein the second plurality of sensors are different from the first plurality of sensors;

determining, using the computer system, a third set of locations within the monitored environment of the first entity based on the second set of sensor measurements, wherein each of the third set of locations is associated with the sensor measurement time, wherein determining the sequence of locations of the first entity comprises determining the sequence of locations of the first entity based on the third set of locations.

13. The medium of claim 1, wherein the plurality of sensors comprises electronic emission sensors, and wherein determining the sequence of locations comprises determining a location based on a time of arrival of a signal from a mobile computing device or an angle of arrival of the signal from the mobile computing device.

14. The medium of claim 1, wherein the plurality of sensors comprises a temperature sensor, and wherein the operations further comprise:

determining an entity temperature of the first entity using the temperature sensor, wherein the entity temperature is measured at a first time of measurement; and

determining an entity location associated with the entity temperature at the first time of measurement, wherein the second set of locations comprises the entity location.

15. The medium of claim 1, wherein the plurality of sensors comprises a chemical sensor, and wherein the operations further comprise:

determining a volatile chemical signature of the first entity using the chemical sensor, wherein the volatile chemical signature is measured at a first time of measurement; and

determining an entity location associated with the volatile chemical signature at the first time of measurement, wherein the second set of locations comprises the entity location.

16. The medium of claim 1, wherein the plurality of sensors comprises an ultrasonic sound sensor, and wherein the operations further comprise:

determining a sound of the first entity using the ultrasonic sound sensor, wherein the sound is measured at a first time of measurement; and

determining an entity location associated with the sound at the first time of measurement, wherein the second set of locations comprises the entity location.

17. The medium of claim 1, wherein a sensor of the plurality of sensors is attached to a camera of the plurality of cameras.

18. The medium of claim 1, further comprising:

determining, using the computer system, whether a location in the sequence of locations is in a restricted area of the monitored environment; and

in response to a determination that the location is in the restricted area of the monitored environment, display a warning to a graphical display device.

19. The medium of claim 1, further comprising:

determining, using the computer system, whether a location in the sequence of locations is outside a permitted area of the monitored environment; and

in response to a determination that the location is outside the permitted area of the monitored environment, display a warning to a graphical display device.

20. A method comprising:

acquiring, using a computer system, a set of images from a plurality of cameras, wherein:

each of the plurality of cameras have a different respective field of view, and

at least part of the fields of view are of a monitored environment;

detecting and localizing, using the computer system, in at least some of the set of images, a first entity moving through the monitored environment;

determining, using the computer system, a first set of locations within the monitored environment of the first entity based on locations of the first entity in the set of images, wherein each of the first set of locations is associated with an image acquisition time;

acquiring, using the computer system, a set of sensor measurements of the monitored environment from a plurality of sensors, the plurality of sensors being different from the plurality of cameras;

determining, using the computer system, a second set of locations within the monitored environment of the first entity based on the set of sensor measurements, wherein each of the second set of locations is associated with a sensor measurement time;

determining, using the computer system, whether the first set of locations should be associated with the second set of locations based on a set of confidence factors calculated based on the first set of locations and the second set of locations, the set of confidence factors being indicative of the second set of locations being locations of the first entity and not another entity;

in response to determining that the first set of locations should be associated with the second set of locations, determining, using the computer system, a sequence of locations of the first entity through the monitored environment; and

storing, using the computer system, the sequence of locations in a computer-readable media in communication with the computer system.

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